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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,993	08/09/2001	Harsh D. Sharma	SP-6183 US	4755
22120	7590	08/09/2005	EXAMINER	
ZAGORIN O'BRIEN GRAHAM LLP 7600B N. CAPITAL OF TEXAS HWY. SUITE 350 AUSTIN, TX 78731			LUGO, DAVID B	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,993

Applicant(s)

SHARMA ET AL.

Examiner

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29-39 is/are allowed.
- 6) ☒ Claim(s) 19-21, 25-28 and 40-42 is/are rejected.
- 7) ☒ Claim(s) 22-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/31/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant has cancelled claims 1-18, and has added claims 19-42. New claims 19-42 are addressed below. Regarding claims 19 and 40, Applicant argues that Durham et al. do not disclose dynamically inserting a delay. However, as shown in Fig. 6, signals output to the delay_rise inputs of clock buffers 304h-j are used to provide post-manufacture signal delay adjustment (col. 7, lines 24-31), which occurs during real time data transmission, and is thus considered to be a dynamic delay insertion.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 19-21, 25-28 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durham et al. U.S. Patent 6,532,574 in view of Cai et al. U.S. Patent Application Publication 2002/0124230.

Regarding claims 19 and 40, Durham et al. disclose a method and apparatus for transmitting signals in an integrated circuit where comparisons of signal delays are made for rising/rising and rising/falling signals within adjacent signal lines (col. 8, lines 19-23), considered to be detecting a transition of a first signal associated with a first signal path performed by a means for detecting the transition, and where the timing of a signal line selected from a pair of adjacent signal lines is altered (step 710) by delaying the edge of the clock signal

for the logic driving the selected signal line in order to reduce noise-induced delay variations (col. 8, lines 24-33). The signal adjustment information is stored (step 716), and sent to delay control circuits, considered to be a means for dynamically delaying a second signal associated with a second signal path, which provide post-manufacture signal delay adjustment of the integrated circuit by delaying associated triggering clock signals (Fig. 6, col. 7, lines 24-54), where the delaying is performed dynamically during real time operation.

Durham et al. does not disclose the criteria used for determining which signal line is selected to be delayed. In particular, Durham et al. do not disclose that the delay is based on a priority value of the first and second signal paths.

Cai et al. disclose a timing optimization method where signal paths are assigned priority in order of greatest delay to least delay (page 5, paragraph 56).

It would have been obvious to one of ordinary skill in the art to use the priority scheme of Cai et al. to determine the signal line to be selected for being delayed in the method of Durham et al. in order to optimize timing by preventing the signals with the longest delays from being delayed further.

Regarding claim 20, Durham et al. show in Fig. 2B that the period of the delay is based on a duration of the transition period of the first signal, as the delay is selected such that the transition of signal 2 occurs after the transition signal 1 has already occurred.

Regarding claim 21, Durham et al. show in Fig. 6 the generation of a delay pulse based on the detected transition output from latch 602a, which is considered to be associated with the first signal path, which is passed onto block 602b and the delay_rise input of block 304i, which

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is associated with the second signal path, where the delay is considered to be based on the delay pulse.

Regarding claims 25 and 41, Durham et al. also disclose that consideration of which line is an aggressor inducing the capacitive effects and which are the victims experiencing the effects may be taken into account when considering delay adjustment (col. 7, lines 15-21).

Regarding claim 26, Cai et al. disclose that the signal paths are assigned priority in order of greatest delay to least delay (page 5, paragraph 56) as indicated above.

Regarding claim 27, Durham et al. disclose that the signal lines are adjacent (col. 8, lines 15-19).

Regarding claims 28 and 42, Durham et al. show in Fig. 2B that a transition on the second signal path is inhibited from occurring simultaneously with the transition of the first signal path.

Allowable Subject Matter

4. Claims 29-39 are allowed.
5. Claims 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Lugo
8/5/05


KHAI TRAN
PRIMARY EXAMINER